

REMARKS

The Examiner has objected to Claim 2 because of an informality. Claim 2 has been amended to remove the informality. The Examiner has remarked with respect to Claims 10-12 and 36-38, that patentability of these claims are indistinct and interprets them as product-by-process claims. Applicants respectfully disagree. Even though an epitaxially grown semiconductor layer and a crystalline semiconductor layer may have the same base material, and an etched metal layer and a stamped metal layer may be composed of the same material, it is certainly possible to distinguish the structures listed above. Stamped metal has a different stress and edge characteristics when viewed in magnification, and crystal growth generated subsequent to sawing of a wafer and/or planarization of a substrate can be observed by appropriate microscopy. Therefore, the Examiner's interpretation of the Claims 10-12 and Claims 36-38 as lacking distinction other than to recite a process is incorrect. Therefore, for the above-stated reasons, Applicants believe that the objections to the Claims have been traversed. Further, Applicants believe that the rejection of Claims 10-12 and 36-38 is improper, as significant structural limitations of these claims are not taught or suggested by the references and were not considered in the rejections.

Rejections under 35 U.S.C. §102

The Examiner has rejected Claims 1, 3-6, 10 and 13 under 35 U.S.C. §102(b) as being anticipated by Smith, et al (U.S. 5,824,186). Applicants respectfully traverse. Amended Claim 1 (and similarly Amended Claim 13 which recites the means for retaining the dies and equivalents to the retaining means taught in the specification) recites a substrate and a template layer attached to the substrate, where the template layer includes self-alignment features for guiding the dies during placement and having walls substantially perpendicular to the substrate surface for locating the dies precisely after placement by contacting the sides of the dies.

Smith does not teach the substantially perpendicular locating walls of Amended Claim 1 and further does not teach the retaining means or an equivalent to the retaining means of the present invention. Smith does not teach walls or protrusions perpendicular to the surface, as the Examiner asserts. It is clear from the drawings in Smith that the structures inside of the cavities of Smith have tapered (inclined walls) for receiving microstructures that are tapered to match. Smith is directed away from a placement process and structures compatible therewith (See Smith col. 2 lines 28-41) and is directed toward a structure for slurry feeding microstructures onto a substrate. The Examiner indicates that Figure 15 of Smith shows perpendicular

protrusions, but in fact it does not. Figure 15 is a microscope photograph, and as such, has two-dimensional limitations. However, by observing the illumination patterns of Figure 15 it can be seen in the lower left-hand full cell that the walls of the cavity are in fact tapered (inclined) rather than perpendicular to the substrate surface. Also in the cells where it is visible, the intersection of the topmost wall and the rightmost walls reveals a decreasing width of the cell with depth.

It is also apparent from Figure 15 that the walls are not precise locating means at all (note in particular the right-most center cell and inserted structure), and therefore would not be suitable for aligning mirror sub-arrays as the walls of the present invention are suited to. Smith in general, is directed toward micron-sized structure integration and not the placement and precision horizontal location of large optical dies on a substrate. In particular, the tapered walls of Smith would make the position of the die surface with respect to the surface of the substrate would vary widely with small variations in die width, due to the continuous taper on the cavities of Smith. Therefore Applicants believe that the rejection of Claims 1, 3-6, 10 and 13 under 35 U.S.C. §102(b) is overcome.

The Examiner has also rejected Claims 1, 11 and 12 under 35 U.S.C. §102(e) as being anticipated by Wang, et al. (U.S. 2002/0186477). An affidavit and supporting evidence are attached showing a date of invention prior to the date of applicability of the Wang reference. Therefore Wang does not constitute prior art as to the Claims of the present invention and Applicants believe that the rejection of Claims 1, 11 and 12 under 35 U.S.C. §102(e) is overcome.

Rejections under 35 U.S.C. §103

The Examiner has rejected Claims 1, 3-6, 10, 13, 27, 37 and 38 under 35 U.S.C. §103(a) as being unpatentable over Smith in view of Schauger (U.S. 2002/0180016), Claim 34 in further view of Ramalingam, et al. (U.S. 6,490,166), Claim 35 in further view of McKee, et al. (U.S. 5,368,880) and Claim 33 in further view of Liberty, et al. (U.S. 5,298,791).

The Examiner has also rejected Claims 7, under 35 U.S.C. §103(a) as being unpatentable over Smith in view of Liberty.

The Examiner has also rejected Claim 8, under 35 U.S.C. §103(a) as being unpatentable over Smith in view of Ramalingam.

The Examiner also rejected Claim 9, under 35 U.S.C. §103(a) as being unpatentable over Smith in view of McKee.

Applicants respectfully traverse the above rejections. For the reasons stated above with respect to the rejection under 35 U.S.C. §102(b), Smith does not teach the template layer of the

present invention, and therefore the combination of Smith with any of the above secondary references does not teach or suggest the present invention as claimed.

#### **CONCLUSION**

For all of the reasons stated above, Applicant respectfully submits that none of the prior art references relied upon by the Examiner teach or suggest a structure or method in accordance with the present invention. Applicant respectfully submits that Applicant's claimed invention is deserving of patent protection because it describes a useful and functioning structure, which is patentably distinguishable over the prior art.

In conclusion, Applicant respectfully submits that this Amendment, in view of the Remarks offered in conjunction therewith, are fully responsive to all aspects of the objections and rejections tendered by the Examiner in the Office Action. Applicant respectfully submits that they have persuasively demonstrated that the above-identified Patent Application, including Claims 1-13 and 27-38 are in condition for allowance. Such action is earnestly solicited.

It is not believed that this Amendment requires any fee other than the fee for the one-month extension of time, but if there are any other fees incurred by this communication, please deduct them from our Deposit Account NO. 23-0830.

Respectfully submitted,

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